

Remarks

Applicant respectfully requests reconsideration in view of the foregoing amendments and the following remarks. This amendment cancels claim 9 without prejudice. With entry of this amendment, claims 1-8, 10-12 and 14-25 are pending.

Examiner Interview

Applicant thanks the Examiner for the courtesy of a telephone interview on November 8, 2006. The interview addressed proposed amendments in view of rejections under 35 U.S.C. § 101, as well as the concept of a “modulation index” in view of U.S. Pat. No. 6,400,449 to Maris et al. (Maris).

Allowable Subject Matter

The Action indicates that claims 16-24 are allowed, and that claim 15 would be allowable if rewritten as an independent claim including all features of its parent claim.

Rejections under 35 U.S.C. § 101

The Action rejects claims 1-12, 14, 15 and 25 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. The rejection of claim 9 is moot in light of the cancellation of this claim without prejudice.

This response amends independent claim 1 to recite:

A method, comprising:
providing a first frequency-modulated light signal having a first modulation index;
providing a second frequency-modulated light signal having a second modulation index;
controlling a difference between the first modulation index and the second modulation index;
combining the first frequency-modulated light signal and the second frequency-modulated light signal to reduce residual amplitude modulation in accordance with the difference;
processing at least a portion of the combined light signals; and
storing results of the processing.

For example, the original specification states:

Detector 50 can be of any suitable type, such as a photodiode or photomultiplier tube, just to name a couple of examples. Device(s) 54 process detector signal 52 to further analyze,

store, output, display, indicate, and/or transmit the spectroscopic information determined from signal 52, if/as desired.

See page 8, lines 3-6. See also Figs. 2-4. Claims 5 and 7 depend from claim 1 and are amended for consistency with their newly amended parent claim.

Independent claim 8 is amended to recite “detecting at least a portion of the at least partially nulled light signal to produce a detector signal; processing the detector signal; and storing results of the processing.”

This response also amends independent claim 25 to recite:

An apparatus, comprising:

means for interrogating a material to provide a first frequency-modulated light signal having a first modulation index, the first frequency-modulated light carrying spectroscopic information with residual amplitude modulation;

means for generating a second frequency-modulated light signal having a second modulation index;

means for combining the first frequency-modulated light signal and the second frequency-modulated light signal; and

means for reducing the residual amplitude modulation in accordance with a difference between the first modulation index and the second modulation index to improve detection of the spectroscopic information;

means for detecting the spectroscopic information;

means for processing the spectroscopic information; and

means for storing results of the processing.

Independent claims 1, 8 and 25 therefore recite statutory subject matter and are allowable under 35 U.S.C. § 101. Claims 2-7 depend from claim 1 and claims 10-12, 14 and 15 depend from claim 8. These dependent claims are likewise allowable under 35 U.S.C. § 101. Applicant respectfully requests withdrawal of the rejection.

Rejections under 35 U.S.C. § 102(b)

The Action rejects claims 8-12, 14 and 25 under 35 U.S.C. § 102(b) as allegedly anticipated by Maris. Applicants respectfully traverse this rejection. Additionally, the rejection of claim 9 is moot in light of the cancellation of this claim without prejudice.

Independent Claim 8

Claim 8 recites:

A method, comprising:

providing frequency-modulated light carrying information with undesired amplitude modulation, the frequency-modulated light being provided with *a first modulation index*;
generating other light that is frequency-modulated with *a second modulation index*, the other light having *a carrier frequency different than the frequency-modulated light*;
at least partially nulling the undesired amplitude modulation with the other light to improve detection of the information, wherein the first modulation index is larger than the second modulation index. . . .

Maris does not teach or suggest such a method. For example, Maris describes “intensity modulators” having different modulation frequencies (see, e.g.: col. 11, lines 50-54; and col. 12, lines 47-55), but Maris is understood to be silent as to a “modulation index.” Maris is also understood to be silent as to two types of frequency-modulated light having different carrier frequencies. For at least these reasons, claim 8 is allowable over Maris. Claims 10-12 and 14 depend from claim 8 and are allowable over Maris for at least the reasons stated above, as well as for the unique, independently patentable combinations of method acts recited therein.

Applicant respectfully requests withdrawal of the rejection.

Independent Claim 25

Claim 25 recites:

An apparatus, comprising:
means for interrogating a material to provide a first frequency-modulated light signal having *a first modulation index*, the first frequency-modulated light carrying spectroscopic information with residual amplitude modulation;
means for generating a second frequency-modulated light signal having *a second modulation index*;
means for combining the first frequency-modulated light signal and the second frequency-modulated light signal. . . .

Maris does not teach or suggest such a method. Maris is understood to be silent as to a “modulation index.” For at least this reason, claim 25 is allowable over Maris. Applicant respectfully requests withdrawal of the rejection.

New Claims

New claims 26 and 27 depend from claim 1.

Comments on Reasons for Allowance

The Action at page 5 states, "Claims 2-7 would be allowed by the virtue of dependency on the allowed claim 1." Applicants note that claims 2-7 are allowable for the unique and independently patentable combinations of method acts recited therein.

The Action at page 6 state, "Claims 16-24 are allowed by the virtue of dependency on the allowed claim 16." Applicants note that claims 16-24 are allowable for the unique and independently patentable combinations of features recited therein.

Request for Interview

If any issues remain, the Examiner is formally requested to contact the undersigned attorney prior to issuance of the next Office Action in order to arrange a telephonic interview. It is believed that a brief discussion of the merits of the present application may expedite prosecution. Applicants submit the foregoing formal Amendment so that the Examiner may fully evaluate Applicants' position, thereby enabling the interview to be more focused.

This request is being submitted under MPEP § 713.01, which indicates that an interview may be arranged in advance by a written request.

Conclusion

In light of the foregoing amendments and remarks, all claims are now in condition for allowance. Applicant respectfully requests action to such end. Should any issues remain, the Examiner is requested to call the undersigned attorney.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

One World Trade Center, Suite 1600
121 S.W. Salmon Street
Portland, Oregon 97204
Telephone: (503) 595-5300
Facsimile: (503) 595-5301

By 

David P. Petersen
Registration No. 28,106